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10/673,118	09/26/2003	Andrew D. Flockhart	4366-106	9237

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EXAMINER
WAL, ERIC CHARLES

ART UNIT	PAPER NUMBER
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MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 July 2008</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-3,6-14,16-26 and 28-34</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,6-14,16-26 and 28-34</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/25/08</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-3, 6-14, 16-26, and 28-34 are presented for examination.

2.   In view of the Pre-Appeal Conference Request filed on 08/14/2008,

PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following

two options:

        (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply

under 37 CFR 1.113 (if this Office action is final); or,

        (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed

by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and

appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth

in 37 CFR 41.20 have been increased since they were previously paid, then appellant

must pay the difference between the increased fees and the amount previously paid. A

Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing

below.

3.   This Office Action is made Final on the basis of the Amendments to the claims

filed 08/10/2007. Therefore, the finality of Final Rejection dated 10/26/2007 is

withdrawn.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

5.   Claims 16-19, and 20-25 are rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter.

6.   Claims 16 and 20 recite an apparatus; however, it appears that the system would

reasonably be interpreted by one of ordinary skill in the art as software per se, failing to

be tangibly embodied or include any recited <u>hardware</u> as part of the system.

Furthermore, software is an equivalent means for performing the function of claim 16.

The components of claim 20 can all be construed as software.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-3, 6-7, 13, 16-17, 20-21, 24-26, and 28 are rejected under 35 U.S.C.

103(a) as being unpatentable over Zenner (US Pat No. 6,718,330).

9.   Regarding claim 1, Zenner teaches a method for balancing resource loads,

comprising:

        receiving a work request (col 2 lines 21-23, "inbound request");

determining for each of a plurality of service locations a probability of servicing

said work request within a target time (col 2 lines 32-36, abstract, wherein a completion

time prediction is indicative of an agent's ability to process the transaction); wherein

said determined probability includes determining a relative probability for each service

location included in the plurality of service locations (col 2 lines 36-39, "likelihood of

completing the work first");

selecting at least a first service location having at least one of a greatest

determined probability of servicing said work request within said target time and a

sufficient determined probability of servicing said work request within said target time;

and assigning said work request to said selected service location (col 2 lines 36-39).

10.   Zenner does not explicitly teach that the relative probability is determined by

calculating a number of opportunities to service said work request within said target time

by each service location included in the plurality of service locations. Zenner only

teaches that work is assigned to the agent having the highest likelihood of completing

the work first in the group of agents (col 2 lines 36-39). However, one of ordinary skill in

the art would realize Zenner's teaching of completion time prediction would be

analogous to a number of opportunities, since having a lower completion time allows for

more opportunities to operate on the work request.

11.   Regarding claims 2 and 6, Zenner teaches that selecting at least a first service

location comprises selecting at least a first service location having a sufficient

determined probability or at least a selected minimum number of opportunities to

service said work request within said target time (col 2 lines 36-39, wherein it is inherent

that agent must be able to process the task).

12.   Regarding claim 3 and 7, Zenner teaches the step of selecting at least a first

service location comprises selecting at least a first service location having a greatest

determined probability or a greatest number of opportunities to service said work

request within said target time (col 2 lines 36-39).

13.   Regarding claim 13, Zenner teaches that each of said service locations is

associated with a queue capable of containing a plurality of work requests (col 2 line

37).

14.   Regarding claim 16, it is the apparatus claim of claim 1 above. Therefore, it is

rejected for the same reasons as claim 1 above.

15.   Regarding claim 17, Zenner teach that said service location is associated with a

queue and comprises at least one associated resource (col 2 line 37 and col 3 lines 25-

27).

16.   Regarding claim 20, Zenner teaches a work allocation apparatus, comprising:

        a plurality of service locations (col 2 lines 32-35);

a plurality of service resources, wherein at least a one of said service resources is associated with each of said service locations (wherein it is inherent that a computer system has associated resources);

a communication network interface, operable to receive work requests (col 2 lines 22-25, wherein it is inherent that a network interface exists); and

a controller, wherein said controller operates to calculate a relative probability that a work request will be serviced within a target time for each service location included in the plurality of service locations, wherein a work request received at said communication network interface is assigned to a service location having at least one of a highest probability of servicing said work request within a predetermined target time and a sufficient probability of servicing said work request within a predetermined target time (col 2 lines 32-36).

17.   Zenner does not explicitly teach that the relative probability is determined by calculating a number of opportunities to service said work request within said target time by each service location included in the plurality of service locations. Zenner only teaches that work is assigned to the agent having the highest likelihood of completing the work first in the group of agents (col 2 lines 36-39). However, one of ordinary skill in the art would realize Zenner's teaching of completion time prediction would be analogous to a number of opportunities, since having a lower completion time allows for more opportunities to operate on the work request.

18.   Regarding claim 21, Zenner teaches that said service resources comprise

service agents (col 2 lines 22-25).

19.   Regarding claim 24, Zenner teaches that said communication network interface

is interconnected to at least one of an Internet protocol network and a public switched

telephone network (col 1 lines 41-59).

20.   Regarding claim 25, Zenner teaches that said service locations each comprise a

server (col 4 lines 13-29).

21.   Regarding claims 26, and 28, they are the apparatus claims of claim 1.

Therefore, they are rejected for the same reasons as claim 1.

22.   Claims 14, 18, and 22-23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Zenner (US Pat No. 6,718,330).in view of Applicant's Admitted Prior

Art (AAPA).

23.   Regarding claims 14 and 18, Zenner does not teach that said service location

comprise at least one split.

24.   However, AAPA teaches the use of agents in call center systems and the

common practice of dividing up agents into splits to differentiate skills and capabilities

(pg 1 lines 10-20). Agents are defined as background tasks that perform tasks for users

(Microsoft Computer Dictionary, 5th Edition, 2002). It would have been obvious to one of

ordinary skill in the art to modify Zenner to teach using a split. One would be motivated

by the desire to group service locations according to skills and capabilities to target

work requests.

25.   Regarding claim 22, Zenner does not teach that said service resources are

organized into splits

26.   However, AAPA teaches the use of agents in call center systems and the

common practice of dividing up agents into splits to differentiate skills and capabilities

(pg 1 lines 10-20). It would have been obvious to one of ordinary skill in the art to modify

Zenner to teach using a split. One would be motivated by the desire to group service

locations according to skills and capabilities to target work requests.

27.   Regarding claim 23, Zenner does not teach that said work request is associated

with a request for assistance.

28.   However, AAPA teaches the use of load balancing work in call centers (pg 1

lines 6-20). It would have been obvious to one of ordinary skill in the art to extend the

teachings of Zenner to call centers where each work request is associated with a

request for assistance.

29.   Claims 8-12, 19, and 29-34 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Zenner (US Pat No. 6,718,330) in view of Costantini et al. (US Pat
No. 5,506,898).

30.   Costantini was disclosed on IDS dated 12/14/2006.

31.   Regarding claim 8, Zenner does not teach that said number of opportunities
(#OPPS) is calculated as #OPPS=((Target time-EWT)/WAT)+1, where EWT is the
estimated wait time for a work request assigned to said service location, and where
WAT is the weighted advance time for a work request assigned to said service location.

32.   Costantini teaches the use of an average rate of advance in determining the
estimated wait time in a queue (Fig 5, 502 and 504).

33.   It would have been obvious to one of ordinary skill in the art at the time of the
invention to include the use a measure such as a weighted advance time or average
rate of advance in determining the number of opportunities or estimated wait time. One
would be motivated by the desire to produce a more accurate estimate of how long an
item would or will have to wait in a particular queue before being serviced as evidenced
by Costantini (col 2 lines 4-10).

34.   Regarding claims 9-10, Zenner does not teach calculating an advance time
metric or that the advance time metric comprises an expected wait time, wherein said
step of selecting comprises selecting a location having a lowest expected wait time.

35.   Costantini teaches the use of an average rate of advance in determining the

estimated wait time in a queue (Fig 5, 502 and 504).

36.   It would have been obvious to one of ordinary skill in the art at the time of the

invention to include the use a measure such as a weighted advance time or average

rate of advance in determining the estimated wait time. One would be motivated by the

desire to produce a more accurate estimate of how long an item would or will have to

wait in a particular queue before being serviced as evidenced by Costantini (col 2 lines

4-10).

37.   Regarding claim 11, Costantini teaches that said advance time metric comprises

a weighted advance time trend, wherein said step of selecting comprises selecting a

location having a lowest weighted advance time trend (Fig 3, 302).

38.   Regarding claim 12, Costantini teaches that said weighted advance time trend

(WAT_Trend) is calculated as $WAT\_Trendn = (x*WAT\_Trend.sub.n-1) + ((1-x)*WAT\_-$

Change), where x is a constant, and where the WAT_Change is calculated as

$WAT\_Change = (WAT.sub.n - WAT.sub.n-1)/WAT.sub.n-1$ (Fig 3, 302).

39.   Regarding claim 19, it is the apparatus claim of claim 9 above. Therefore, it is

rejected for the same reasons as claim 9 above.

40.   Regarding claims 29-34, they are the apparatus claims of claims 8-9, 11-12, and

15. Therefore, they are rejected for the same reasons as claims 8-9, 11-12, and 15.

Allowable Subject Matter

41.   Independent claims 1, 16, 20, and 26 would be allowable if the subject matter of

claims 8 and 12 were combined into said independent claims.

Response to Arguments

42.   Applicant's arguments with respect to claims 1-3, 6-14, 16-26, and 28-34 have

been considered but are moot in view of the new ground(s) of rejection.

Conclusion

43.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

44.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Eric C. Wai whose telephone number is 571-270-1012.

The examiner can normally be reached on Mon-Thurs, 8am-5pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng - Ai An can be reached on 571-272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/   /Eric C Wai/
Supervisory Patent Examiner, Art Unit 2195   Examiner, Art Unit 2195